



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/665,529 | 09/22/2003 | Kohichi Yamauchi | 1560-0397P | 5921 |

2292 7590 01/14/2008
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

| |
|----------|
| EXAMINER |
|----------|

DHINGRA, PAWANDEEP

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2625

| | |
|-------------------|---------------|
| NOTIFICATION DATE | DELIVERY MODE |
|-------------------|---------------|

01/14/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

| | | | |
|------------------------------|---|--|--|
| Office Action Summary | Application No. 10/665,529 | Applicant(s) YAMAUCHI ET AL. | |
| | Examiner Pawandeep S. Dhingra | Art Unit 2625 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- This action is responsive to the following communication: Amendment after non-final rejection filed on 10/09/2007.
- Claims 6-7 have been added.
- Claims 1-7 are now pending in the present application.

Response to Arguments

Applicant's arguments, see pages 4-8, filed 10/9/2007, with respect to the rejection(s) of claim(s) 1-5 under Sasamoto, and Mizoguchi art have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Japanese Patent Application, Hamada Futoshi (9-292753).

Applicant further argues that there has been no supplemental reference provided for the range of 2.5 mm and 4 mm.

In reply, examiner agrees that he has not provided any supplemental reference since the range of 2.5 mm and 4 mm has been rejected based on obvious design choice. The primary goal of the present invention and Sasamoto is same as to have the transfer unit not touching (separated from) the image carriers. Therefore, it would have been obvious to a person of ordinary skill in the art to separate the transfer unit with distance between 2.5 mm and 4 mm from the image carriers as an obvious design choice for having the transfer unit separated from the image carriers at a safe distance as desired. Furthermore, Mizoguchi et al., US 6,470,166, see column 6, lines 20-27

teaches "In order to protect drum 5a from damage, the contact position of roller 13Y with belt 3 is shifted from the contact position of drum 5a with belt 3 by distance X. This displacement thus avoids contacting drum 5a with roller 13Y via belt 3" (note that again the goal is the same and the distance X can be between 2.5 mm and 4 mm or as desired by the user to serve the same purpose).

Claim Rejections - 35 USC § 112

Previous 112 rejections to claims are still valid since applicant has failed to address all the arguments made in the previous action.

In particular, claim 4 recites "image carrier corresponding to the first transfer member comes to between 2.5 mm and 4 mm when the transfer unit is separated from the image carriers". It is not clear as to what reference point is distance being compared to? Plus, is that distance needs to be maintained for just a particular image carrier? Due to these reasons, the claim is unclear and is indefinite to the one with the ordinary skill in the art.

Examiner Notes

Examiner cites particular paragraphs, columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully

consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, and 5-7 are rejected under 35 U.S.C. 103 as being unpatentable over Sasamoto et al., US 6,324,374 in view of Hamada Futoshi, JP 9-292753.

Re claim 1, Sasamoto discloses an image forming apparatus (see abstract) comprising: a plurality of image carriers (see elements 10Y, 10M, 10C, 10B in figure 2) arranged in a sheet transporting direction (see figures 1-2; column 6, lines 19-42); and a transfer unit (see column 6, lines 19-28), which has transfer members (i.e. rollers) corresponding to the respective image carriers (see column 6, lines 19-28), for transferring images carried on the respective image carriers (see abstract, column 6, lines 19-42, and column 10, lines 39-60).

Sasamoto fails to further disclose wherein the transfer unit has a rotary fulcrum in the vicinity of an extension of the axis of a transfer member located on one end portion in the sheet transporting direction so as to be approximately parallel to the axis, and can

be rotated on the rotary fulcrum in directions of moving to and from the image carriers, and wherein a distance between any two of the transfer members stays constant during a rotation of the transfer unit.

However, Futoshi teaches wherein the transfer unit has a rotary fulcrum in the vicinity of an extension of the axis of a transfer member located on one end portion in the sheet transporting direction so as to be approximately parallel to the axis (see applicant's disclosure (US 2004/0062577) under admitted prior art, paragraphs 4-11, plus, see paragraphs 1-22 in Futoshi (9-292753)), and can be rotated on the rotary fulcrum in directions of moving to and from the image carriers (see paragraphs 4-11 in US 2004/0062577 and paragraphs 1-22 in Futoshi), and wherein a distance between any two of the transfer members stays constant during a rotation of the transfer unit (see paragraphs 4-11 in US 2004/0062577 and paragraphs 1-22 in Futoshi).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the image forming apparatus as disclosed by Sasamoto to include the image forming apparatus as taught by Futoshi for the benefit of having a proper image, which is formed by the easy configuration and tuning activity as taught by Futoshi at paragraph 22.

Re claim 2, Sasamoto further discloses the transfer members (i.e. rollers) are movable in directions of moving to and from the image carriers (see figures 2, 4, 7-11; column 12, line 58 – column 13, line 57, column 10, line 39 – column 11, line 27, and claim 7).

Re claim 3, Sasamoto fails to explicitly disclose the transfer unit includes a supporter for supporting the transfer members, and the supporter has the rotary fulcrum.

However, Futoshi teaches the transfer unit includes a supporter for supporting the transfer members, and the supporter has the rotary fulcrum (see paragraphs 4-11 in US 2004/0062577 and paragraphs 1-22 in Futoshi).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the image forming apparatus as disclosed by Sasamoto to include the image forming apparatus as taught by Futoshi for the benefit of having a proper image, which is formed by the easy configuration and tuning activity as taught by Futoshi at paragraph 22.

Re claim 5, Sasamoto further discloses a transfer unit (see column 6, lines 19-28) comprising: a plurality of juxtaposed transfer members (see figure 2; column 6, lines 19-42; column 10, line 39 – column 11, line 27).

Sasamoto fails to further disclose a supporter for supporting the transfer members so as to be rotatable and movable in a radial direction, wherein the supporter has a rotary fulcrum in the vicinity of an extension of the axis of a transfer member located at one end portion in a direction in which the transfer members are juxtaposed, so as to be approximately parallel to the axis, and wherein a distance between any two of the transfer members stays constant during a rotation of the transfer unit.

However, Futoshi teaches a supporter for supporting the transfer members so as to be rotatable and movable in a radial direction (see paragraphs 4-11 in US 2004/0062577 and paragraphs 1-22 in Futoshi), wherein the supporter has a rotary fulcrum in the vicinity of an extension of the axis of a transfer member located at one end portion in a direction in which the transfer members are juxtaposed, so as to be approximately parallel to the axis (see paragraphs 4-11 in US 2004/0062577 and paragraphs 1-22 in Futoshi), and wherein a distance between any two of the transfer members stays constant during a rotation of the transfer unit (see paragraphs 4-11 in US 2004/0062577 and paragraphs 1-22 in Futoshi).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the image forming apparatus as disclosed by Sasamoto to include the image forming apparatus as taught by Futoshi for the benefit of having a proper image, which is formed by the easy configuration and tuning activity as taught by Futoshi at paragraph 22.

Re claim 6, Futoshi further teaches the rotary fulcrum is provided separately from any shaft and transfer members (see paragraphs 4-11 in US 2004/0062577 and paragraphs 1-22 in Futoshi).

Re claim 7, Futoshi further teaches the rotary fulcrum is fixed to the supporter (see paragraphs 4-11 in US 2004/0062577 and paragraphs 1-22 in Futoshi).

3. Claim 4 is rejected under 35 U.S.C. 103 as being unpatentable over Sasamoto et al., US 6,324,374 in view of Hamada Futoshi, JP 9-292753 further in view of well-known art.

Re claim 4, Sasamoto further discloses the transfer unit (i.e. transfer belt) is rotatable on the rotary fulcrum (i.e. pivot subunit) so that a distance between a first transfer member (i.e. first roller) adjacent to a second transfer member (i.e. second roller) closer to the rotary fulcrum (see figures 7-11; column 12, line 58 – column 13, line 57, and claim 7), and an image carrier (i.e. photoconductive drum) corresponding to the first transfer member (i.e. corresponding roller) comes to a separated position when the transfer unit is separated from the image carriers (see figures 7-11; column 12, line 58 – column 13, line 57).

Sasamoto does not disclose expressly an image carrier corresponding to the first transfer member comes to between 2.5 mm and 4 mm when the transfer unit is separated from the image carriers, wherein the first transfer member is adjacent to a second transfer member, the second transfer member being closer to the rotary fulcrum than the first transfer member.

However, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to separate the transfer unit with distance between 2.5 mm and 4 mm from the image carriers. One of ordinary skill in the art, would have expected applicant's invention to perform equally well with Sasamoto's image forming apparatus because Sasamoto's invention provides the same advantages and solves the same

problems illustrated by applicant's invention (see Sasamoto, column 7, lines 45-57; column 13, lines 44-57, note that at separated position, the transfer belt only contacts the desired photoconductive element, hence there would be no rubbing between other photoconductor drums and transfer members or an instance of a poor transfer would ever occur).

Futoshi further teaches wherein the first transfer member is adjacent to a second transfer member, the second transfer member being closer to the rotary fulcrum than the first transfer member (see paragraphs 4-11 in US 2004/0062577 and paragraphs 1-22 in Futoshi).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the image forming apparatus as disclosed by Sasamoto with well-known art (design choice) and to include the image forming apparatus as taught by Futoshi for the benefit of having a proper image, which is formed by the easy configuration and tuning activity as taught by Futoshi at paragraph 22.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action. and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pawandeep S. Dhingra whose telephone number is 571-270-1231. The examiner can normally be reached on M-F, 9:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Lamb can be reached on 571-272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

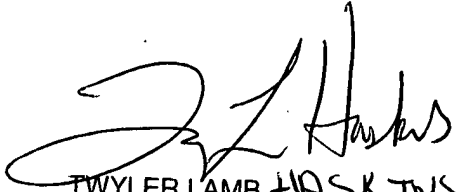
Application/Control Number:
10/665,529
Art Unit: 2625

Page 11

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Pd

Pd
January 7, 2008


TWYLER LAMB HASKINS
SUPERVISORY PATENT EXAMINER